

REMARKS

Reconsideration of the application in view of the present amendment is respectfully requested.

By the present amendment, the title has been changed to one believed to be clearly indicative of the invention the claims are directed to. Claim 1 has been cancelled. Claim 17 has been added. Claims 2-3 have been amended to provide their proper dependency.

Based on the foregoing amendments and the following remarks, the application is deemed to be in condition for allowance and action to that end is respectfully requested.

The Examiner rejected Claims 1-3 and 5-10 under 35 U.S.C. §102(b) as anticipated by and Claims 4 and 11-16 under 35 U.S.C. §103(a) as being unpatentable over Terada, et al., U.S. Patent No. 6,483,272 (Terada). It is respectfully submitted that claims 2-17 are patentable over Terada.

Specifically, Claim 17 recites the feeding, in a subsequent refresh cycle (2) that follows a period (K) in a number (M) of charging cycles (1), over a refresh charging cycle (6), a lower effective refresh current($I_{refresh}$) to each of the at least two series connected cells.

As discussed in the specification, the object of the present invention is to provide a method of charging of a battery pack that makes possible an adequate service life of the battery pack with short charge times. Applicants have found out that subsequent refresh cycles that follow periodically in a number of charging cycles, produce the overcharging necessary for an adequate service life with short charging times and which is done using a pre-defined overcharge capacity for regenerating the weakest cell as a factor of usage.

It is respectfully submitted that Terada does not disclose refresh charging of a battery. Terada discloses the opposite, namely, refresh discharge (“charge” – to energize a storage battery) by passing through it current in a direction opposite to the discharge, “discharge” – to cause to release of store energy or electric charge from (a battery).

American Heritage Dictionary of the English Language, Fourth Edition, Houghton Mifflin Company, 2000).

Terada’s object is to improve refresh discharge conventionally used to eliminate a so-called “memory effect” (column 1, lines 12-28) by optimizing the timing of the refresh discharge. Terada has no suggestion whatsoever of using a refresh charge, nor is such inherent in Terada.

The Office Action alleges that Terada discloses supplying a lower effective (refresh) charging current during a period of a number of charging cycles (page 3, lines 1-2). Applicants have carefully reviewed the Terada reference and were unable to find mentioning of supplying a lower refresh charging current. In case the Examiner maintains that such is disclosed in Terada, the Examiner is respectfully requested to specifically point out where in Terada supplying a lower (refresh) charging current is disclosed.

In case it is asserted that the claimed feature is inherently present in Terada, it is respectfully requested to supply the necessary extrinsic evidence that the missing matter is necessarily present in the reference, as required by case law that holds:

“To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *Continental Can Co USA v. Monsanto Co.*, 948 F.2d 1264, 1268 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

In view of the above, it is respectfully submitted that Terada does not anticipate or makes obvious the present invention, as defined by Claim 17, and Claim 17 is patentable over Terada and is allowable.

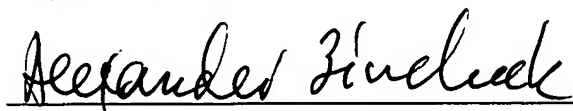
Claims 2-16 depend on Claim 17, directly or indirectly, and are also allowable.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance, and allowance of the application is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place the case in condition for final allowance, it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Respectfully submitted,



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